Applied StemCell

Genome editing *in vitro* and *in vivo*

Human iPSC-derived Neurons

Functional mixed neurons derived from well-characterized iPSCs and NSCs

Key Features:

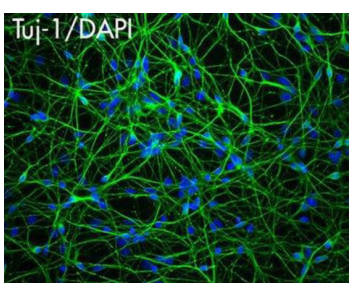
- High purity neurons after maturation: >90% Tuj1+ neurons and < 5% GFAP+ cells
- High cell viability of cryopreserved neurons (>80%)
- Available as isogenic lineages of mixed neurons and associated neuronal derivatives from two different control iPSC lines
- Functionally viable neurons capable of neuronal excitability and synapse formation
- Long-term viability in cell culture (>30 days)

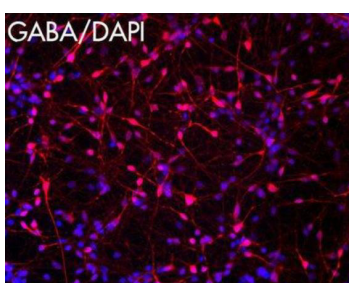
Benefits & Applications:

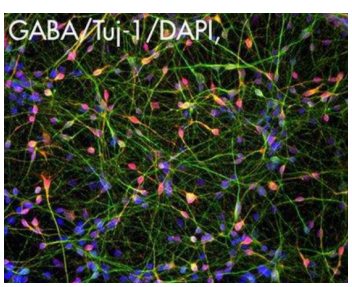
- Electrophysiology and synaptic functionality assays
- Neurotoxicity and neuroprotection screening tests
- Physiologically relevant disease modeling platform
- Gene profiling under isogenic conditions to understand gene functionality associated with neurological diseases

SYMBOL	NSC	NEURONS	ASTROCYTES	DESCRIPTION
ATP10B	2	489	165	
DCX	467	7918	1026	
GREM2	11	685	182	
LHX1	15	1878	36	
LOC150568	284	640	317	
MAB21L2	2	2660	7	
MAP6	1266	4210	1004	
MYT1	70	8591	578	
NEUROD1	53	328	190	
NEUROG1	34	570	137	NEURON
NEUROG2	207	8367	131	
PORK1	245	450	96	
PLXNA2	23	780	328	
POU4F2	-5	1386	69	
RG51	8	13	9	
SEMASA	212	482	282	
SLC17A6	12	2357	161	
SLC17A8	-15	316	76	
TUBB3	20296	54556	35715	

Whole genome profiling for markers expressed by neurons derived from NSCs.



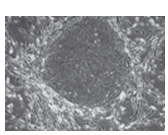




Expression of neuronal markers in derived neurons: >90% cells express Tuj1 (green) and GABA (red).

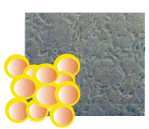
Custom Differentiation Service

Differntiate YOUR iPSCs to cell line lineage of your choice



iPS Cells
ASE-9109 (male)
ASE-9110 (female)

Differentiation



Neural Stem Cells
(Pax6, Sox1)
ASE-9234, ASE-9234F

Astrocyte Precursor Cells

ASE-9322P, ASE-9322PF
ASE-9322K, ASE-9322KF

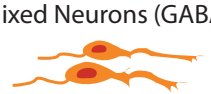
Co-Culture with Neurons
Disease Modeling
Drug/Tox Screening
Mature Astrocytes (GFAP)

ASE-9322M, ASE-9322MF

Disease Modeling (PD)
Drug Screening/Tox Studies
Dopaminergic Neurons (TH)

ASE-9323, ASE-9323F
ASE-9323K, ASE-9323F

Drug Testing
Tox Studies
Disease Modeling
Mixed Neurons (GABA)



ASE-9323, ASE-9323F
ASE-9323K, ASE-9323KF

iPSC-derived Neuron Product Catalog:

ASE-9321	Neurons (iPSC from Blood Cells; Male)
ASE-9321F	Neurons (iPSC from Blood Cells; Female)
ASE-9321K	Neurons Starter Kit (iPSC from Blood Cells; Male)
ASE-9321KF	Neurons Starter Kit (iPSC from Blood Cells; Female)
ASE-9321DI	Neuron Induction Media 100 mL
ASE-9321DM	Neuron Maturation Media 100 mL

Related Products: Master iPSCs and Differentiated-Cell Lines

ASE-9109	Human iPSC (iPSC from Blood Cells; Male); Master Lines for Neural Differentiation and Genome Engineering
ASE-9110	Human iPSC (iPSC from Blood Cells; Female); Master Lines for Neural Differentiation and Genome Engineering
ASE-9324	Neural Stem Cells (iPSC from Blood Cells; Male)
ASE-9324F	Neural Stem Cells (iPSC from Blood Cells; Female)
ASE-9324SM	NSC Maintenance Media 100 mL
ASE-9322	Astrocytes (iPSC from Blood Cells; Male)
ASE-9322F	Astrocytes (iPSC from Blood Cells; Female)
ASE-9322M	Astrocytes Mature (iPSC from Blood Cells; Male)
ASE-9322MF	Astrocytes Mature (iPSC from Blood Cells; Female)
ASE-9322K	Astrocytes Starter Kit (iPSC from Blood Cells; Male)
ASE-9322KF	Astrocytes Starter Kit (iPSC from Blood Cells; Female)
ASE-9322DI	Astrocyte Induction Media 100 mL
ASE-9322DM	Astrocyte Maturation Media 100 mL
ASE-9323	Dopamine Neurons (iPSC from Blood Cells; Male)
ASE-9323F	Dopamine Neurons (iPSC from Blood Cells; Female)
ASE-9323K	Dopaminergic Neuron Starter Kit (iPSC from Blood Cells; Male)
ASE-9323KF	Dopaminergic Neuron Starter Kit (iPSC from Blood Cells; Female)
ASE-9323DI	DOPA Induction Media 100 mL
ASE-9323DM	DOPA Maturation Media 100 mL

References:

- Pei, Y., Peng, J., Behl, M., Sipes, N. S., Shockley, K. R., Rao, M. S., … Zeng, X. (2016). Comparative Neurotoxicity Screening in Human iPSC-derived Neural Stem Cells, Neurons and Astrocytes. Brain Research, 1638(Pt A), 57–73.
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